

**Vision Technology Stock Market Performance**

Company Name	EV € mn	Sales € mn	Share price	Local curr.	Δ 52W High	2021E EV/EBITDA
<b>ARTHOS Vision Technology Peers</b>						
ams AG	8.877,4	2.685,3	20,8	CHF	(56,9%)	8,0x
Ametek Inc.	24.635,9	3.956,5	124,3	USD	(0,8%)	20,7x
Basler AG	757,9	168,0	76,0	EUR	0,0%	18,4x
Bruker Corp.	7.255,5	1.669,1	56,3	USD	(0,8%)	21,4x
Cognex Corp.	11.593,2	651,7	83,6	USD	(1,5%)	51,7x
Datalogic S.p.A.	858,3	518,1	14,4	EUR	(17,9%)	10,6x
FARO Techn.	938,5	268,2	72,9	USD	(4,4%)	25,4x
Kapsch Traffic Com	405,2	629,4	15,3	EUR	(47,6%)	16,1x
FLIR Systems Inc.	6.019,1	1.608,2	52,5	USD	(11,8%)	16,1x
Hamamatsu	6.521,9	1.132,4	5.810,0	JPY	(6,7%)	19,8x
Hexagon AB	29.256,5	3.785,3	749,0	SEK	(2,3%)	19,9x
Isra Vision AG	1.047,4	133,2	47,2	EUR	(7,9%)	16,3x
Jenoptik AG	1.652,0	764,5	24,4	EUR	(11,2%)	11,2x
Keyence Corp.	98.342,5	4.146,4	55.790,0	JPY	(5,6%)	39,9x
Novanta Inc.	3.678,0	514,6	124,5	USD	(2,7%)	35,5x
Nynomic AG	233,1	72,7	37,1	EUR	(5,4%)	14,6x
Olympus Corp.	22.688,3	5.851,5	2.119,0	JPY	(11,0%)	14,6x
Onto Innovation Inc.	1.771,0	449,2	51,1	USD	(1,7%)	13,9x
Oxford Instr.	1.193,4	330,5	20,1	GBP	(7,6%)	17,9x
Renishaw plc	4.701,5	561,4	59,8	GBP	(4,5%)	29,2x
Stemmer Imaging	112,1	113,4	20,3	EUR	(30,7%)	11,1x
Teledyne Techn.	11.485,3	2.677,7	368,9	USD	(7,5%)	20,7x
TKH Group N.V.	2.177,2	1.415,4	41,4	EUR	(19,9%)	10,6x
<b>Mean</b>					<b>(11,6%)</b>	<b>20,2x</b>
<b>Median</b>					<b>(6,7%)</b>	<b>17,9x</b>

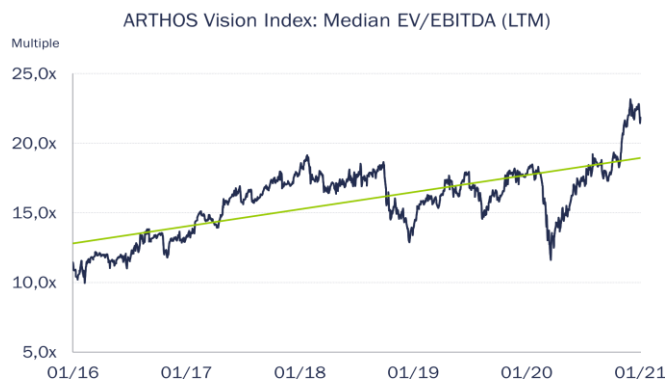
Peer Group includes companies with business focus on Vision technology; Closing share price as of January 06, 2021; Sales as of published last twelve months.

**ARTHOS Vision Technology Index Performance**



ARTHOS Vision Technology Index includes the companies listed above

**Historic Vision Technology Multiple Analysis**



Median development of historic EV/EBITDA Multiple of the ARTHOS Vision Technology Peer Group

**Personal Note**



The COVID-19 stock market collapse in March was followed by a continuous up-swing. As seen in the charts below vision companies quickly recovered their previous share prices and even surpassed them in late summer. Technology companies are a clear winner of the COVID-19 crisis and most listed vision companies participated in that rally. By the end of 2020, the Median EV/EBITDA (LTM) of the ARTHOS-Vision-Index reached a historic high of 23, resulting from anticipated strong future growth.

Public acquirors as Atlas Copco (ISRA) and ams (OSRAM) were under quite some pressure in March but rising valuations proved them right sticking to agreed upon conditions and focussing on the execution of their transactions. Confidence is back and new public takeover bids are out (e.g. for Perceptron and Flir).

COVID-19 and stock market turbulences also had a strong impact on purchase price discussions for SMEs. In spring many projects were delayed as sellers were not willing to accept a significant reduction of prices. In summer & autumn some quick movers were able to acquire businesses without price reductions. And in cases with significant business impact from COVID-19 we see right now a lot of creative earn-out solutions being set up. Those include catch-up formulas allowing sellers to sell without any discount when business is coming back. Furthermore, we see the process procedures adapting to COVID-19 needs. If you are considering selling in 2021, we recommend taking professional advice to support a successful process.

**Current Relevant M&A and Market News**

**May – Jun. 2020:** Faro sells dental business to Open Tech 3D and Faro Photonics to MECCO Partners LLC (US)

**Jul. 17, 2020:** Materion acquired Optics Balzers AG (thin film optical coatings) for an enterprise value of ~ \$160 million

**Jul. 27, 2020:** Ziehm Imaging acquired Therenva, (France)

**Jul. 31, 2020:** Cisco acquired computer vision technology company Modcam AB in Sweden

**Aug. 3, 2020:** Domino Printing Sciences has acquired Lake Image Systems (UK), a market-leading producer of automated, vision-based inspection systems

**Aug. 09, 2020:** Bystronic Laser AG takes over Weber Laserservice B.V.

**Aug. 21, 2020:** Faro acquired Advanced Technical Solutions

**Aug. 31, 2020:** Allegro MicroSystems, Inc. completed the acquisition of Voxel, Inc. for \$40.0 million

**Sep. 1, 2020:** 3D-CT A/S has been taken over by Carl Zeiss

**Sep. 15, 2020:** Artemis Capital Partners acquired an unknown stake in Omega Optical Inc.

**Sep. 28, 2020:** Volkswagen acquired front camera business of HELLA Aglaia Mobile Vision

**Oct. 30, 2020:** Kyocera Corporation entered into an agreement to acquire Soraa Laser Diode, Inc. for \$450 million

**Nov. 2, 2020:** ASML closed the acquisition of Berliner Glas

**Nov. 10, 2020:** Edmund Optics acquired Quality Thin Films (US)

**Jun. – Nov. 2020:** Antares Vision acquired Convel for €15 mn and purchased assets of Adents High Tech for €1.5mn (France)

**Nov. 20, 2020:** Gardasoft Vision LTD (UK) joins CCS group, part of publicly listed Japanese Optex group

**Apr. – Nov. 2020:** Hexagon AB acquired PAS, Inc., DP Technology Corp., Tactiware and Oxblue Corp.

**Dec 07, 2020:** Zeiss acquires majority stake in arivis AG

Notable Recent M&A Transactions

	→		<b>Jun. 24, 2020:</b> Atlas Copco AB closed a business combination agreement to acquire Isra Vision AG for €1.1 billion. The acquisition is an all-cash transaction. Atlas Copco holds 92.19% of the shares and on Aug. 3, 2020 announced the intention to carry out a merger and requested a squeeze-out of the minority shareholders.
	→		<b>Jul. 2, 2020:</b> Jenoptik AG signed an agreement to acquire 100% in two steps until end of 2021 in TRIOPTICS GmbH. The price was not disclosed, the enterprise value equates a combined 2021e EV/EBITDA multiple of 10.4. TRIOPTICS is a supplier of test equipment and manufacturing systems for optical components and sensors.
	→		<b>Aug. 3, 2020:</b> Shenzhen Goodix Technology Co. Ltd completed its acquisition of Dream Chip Technologies GmbH (DCT). Dream Chip is a German fabless semiconductor company, specialized in the development of ASICs, FPGAs, embedded software and systems, with a strong application focus on automotive vision systems.
	→		<b>Aug. 27, 2020:</b> Pinova Capital acquired together with the management Team an unknown majority stake in AT – Automation Technology GmbH. The company develops and produces 3D sensors and sensor solutions for industrial automation as well as smart infrared cameras for condition monitoring and inspection tasks.
	→		<b>Nov. 3, 2019:</b> The OSRAM shareholder meeting approved the Domination and Profit & Loss Transfer Agreement (DPLTA) with ams AG which will enable ams to execute the integration of the companies. As part of the DPLTA ams agreed to increase the cash compensation from €44.65 to €45.54 per share for the remaining 29%.
	→		<b>Dec. 21, 2020:</b> Atlas Copco completed the acquisition of Perceptron, a leading supplier of automated metrology solutions, for USD 7.00 per share. The total purchase price is MSEK 630 (MUSD 68.9) representing a premium of 66% to Perceptron's closing share price. Perceptron will be delisted from Nasdaq.
	→		<b>Nov. 27, 2020:</b> Konica Minolta signed an agreement to acquire 100% of SPECIM, Spectral Imaging Ltd. (FIN) from Bocap. Konica Minolta expands their business to safety, security and environmental science fields as new strategic growth areas. SPECIM develops and manufactures hyperspectral spectrographs and imagers.
	→		<b>Jan. 4, 2021:</b> Teledyne Technologies entered into a definitive agreement to acquire FLIR Systems for ~\$8 billion. FLIR stockholders will receive \$28 per share in cash and 0.0718 shares of Teledyne common stock for each FLIR share, which implies a total purchase price of \$56 per FLIR share and a 40% premium.

Vision Technology Companies' Benchmarking (last twelve months)

	Gross Margin	EBITDA Margin	R&D Margin
	49,2%	18,0%	11,2%
ams AG	33,0%	24,2%	12,3%
Ametek	34,5%	28,0%	n.a.
Basler	52,6%	20,9%	11,8%
Bruker	47,2%	17,1%	9,6%
Cognex	74,1%	25,2%	17,1%
Datalogic	45,0%	10,2%	10,3%
FARO Techn.	52,5%	-1,3%	13,5%
Kapsch TrafficCom	51,0%	-5,6%	n.a.
FLIR Systems	49,7%	22,8%	11,2%
Hamamatsu	48,8%	24,6%	8,7%
Hexagon	63,6%	27,4%	11,9%
Isra Vision	55,8%	17,3%	16,3%
Jenoptik	32,3%	13,1%	5,4%
Keyence	81,7%	51,3%	3,2%
Novanta	41,4%	16,9%	9,9%
Nynomic	23,6%	11,0%	n.a.
Olympus	61,4%	18,4%	n.a.
Onto Innovation	52,5%	18,9%	15,2%
Oxford Instr.	50,2%	16,7%	9,3%
Renishaw	48,7%	18,0%	n.a.
Stemmer Imaging	34,8%	2,4%	n.a.
Teledyne Techn.	39,0%	19,9%	n.a.
TKH Group	49,2%	11,5%	n.a.